Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method to form a functional porous layer including a functional material that is supported on a porous material, the method comprising:

etching a substrate to form at least one gas channel;

applying a first supporter layer within the at least one gas channel, wherein the first supporter layer comprises carbon or glass ~~particles~~ particles; and

applying a plurality of solutions or dispersions containing the functional material, the solutions or the dispersions having different surface tensions, to a porous layer to control the permeation of the functional material in the depth direction of the porous layer according to the difference in the surface tensions, wherein the functional material is at least partially supported by the first supporter material.

2. (Original) The method to form a functional porous layer according to claim 1, further comprising:

removing solvents in the solutions or the dispersions.

3. (Original) The method to form a functional porous layer according to claim 1, wherein the content of the functional material varies in the depth direction of the porous layer.

4. (Original) The method to form a functional porous layer according to claim 1, applying the solutions or the dispersions containing the functional material to the porous layer to impregnate the solutions or the dispersions containing the functional material in the porous layer being repeated a plurality of times for at least one of the solutions or dispersions having different surface tensions.

5. (Original) The method to form a functional porous layer according to claim 4, each of the solutions or the dispersions having different surface tensions having different concentrations of the functional material.

6. (Original) The method to form a functional porous layer according to claim 1, further comprising:

applying a first solution or a first dispersion containing the functional material to the porous layer to impregnate the first solution or the first dispersion containing the functional material in the porous layer; and

applying a second solution or a second dispersion containing the functional material to the porous layer to impregnate the second solution or the second dispersion containing the functional material in the porous layer, the second solution or the second dispersion having a surface tension larger than the surface tension of the first solution or the first dispersion.

7. (Original) The method to form a functional porous layer according to claim 1, the solutions or the dispersions being prepared by dissolving or dispersing the functional material in different solvents.

8. (Original) The method to form a functional porous layer according to claim 1, the porous layer comprising carbonaceous particles.

9. (Original) The method to form a functional porous layer according to claim 1, the functional porous layer comprising carbonaceous particles that support microparticles of at least one metal selected from the group consisting of platinum, rhodium, ruthenium, iridium, palladium, osmium and an alloy composed of two or more of those elements.

10. (Original) The method to form a functional porous layer according to claim 1, the solution or the dispersion containing the functional material including at least one metal microparticle selected from the group consisting of platinum, rhodium, ruthenium, iridium,

palladium, osmium and an alloy composed of two or more of those elements, or at least one compound of the metal.

11. (Original) The method to form a functional porous layer according to claim 1, the functional porous layer being at least one of a first reaction layer and a second reaction layer of a fuel cell that includes a first current-collecting layer, the first reaction layer, an electrolyte membrane, the second reaction layer, and a second current-collecting layer in that order.

12. (Original) The method to form a functional porous layer according to claim 1, the solution or the dispersion containing the functional material being applied with a discharger.

13. (Currently Amended) A method to manufacture a fuel cell including a first current-collecting layer, a first reaction layer, an electrolyte membrane, a second reaction layer, and a second current-collecting layer, the method comprising:

etching a substrate to form at least one gas channel;

applying a first supporter layer within the at least one gas channel, wherein the first supporter layer comprises carbon or glass ~~particles~~ particles;

applying a plurality of solutions or dispersions to a porous layer having carbonaceous particles, the plurality of solutions or dispersions containing a reaction layer forming material and having different surface tensions, wherein the plurality of solutions or dispersions are at least partially supported by the first supporter layer; and

removing solvents in the solutions or the dispersions to form at least one of the first reaction layer and the second reaction layer.

14. (Original) The method to manufacture a fuel cell according to claim 13, at least one of the first reaction layer and the second reaction layer comprising a reaction layer forming material supported on the carbonaceous particles, the content of the reaction layer

forming material varying in the depth direction of the porous layer comprising the carbonaceous particles.

15. (Original) The method to manufacture a fuel cell according to claim 13, applying the solutions or the dispersions containing the reaction layer forming material to the porous layer to impregnate the solutions or the dispersions containing the reaction layer forming material in the porous layer comprising carbonaceous particles being repeated a plurality of times for at least one of the solutions or dispersions having different surface tensions.

16. (Original) The method to manufacture a fuel cell according to claim 13, at least one of the first reaction layer and the second reaction layer being formed by:

applying a first solution or a first dispersion containing the reaction layer forming material to the porous layer comprising the carbonaceous particles to impregnate the first solution or the first dispersion containing the reaction layer forming material in the porous layer; and

applying a second solution or a second dispersion containing the reaction layer forming material to the porous layer comprising the carbonaceous particles to impregnate the second solution or the second dispersion containing the reaction layer forming material in the porous layer, the second solution or the second dispersion having a surface tension larger than the surface tension of the first solution or the first dispersion.

17. (Original) The method to manufacture a fuel cell according to claim 13, the solutions or the dispersions containing the reaction layer forming material having different surface tensions being prepared by dissolving or dispersing the reaction layer forming material in different solvents.

18. (Original) The method to manufacture a fuel cell according to claim 13, further comprising:

applying carbonaceous particles on the first current-collecting layer or the second current-collecting layer to form the porous layer comprising the carbonaceous particles.

19. (Original) The method to manufacture a fuel cell according to claim 13, the solution or the dispersion containing the reaction layer forming material being applied with a discharger.

20. (Original) The method to manufacture a fuel cell according to claim 13, at least one of the first reaction layer and the second reaction layer comprises the carbonaceous particles that support metal microparticles, and the content of the metal microparticles in the reaction layer is larger at the electrolyte membrane than at the current-collecting layer.

21. (Withdrawn) An electronic device provided with a fuel cell manufactured by a method according to claim 13 as a power supply.

22. (Withdrawn) An automobile provided with a fuel cell manufactured by a method according to claim 13 as a power supply.